AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Canceled)
2. (Canceled)
3. (Canceled)
4. (Canceled)
5. (Canceled)
6. (Canceled)
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25. (Canceled)

26. (Canceled)

27. (Canceled)

28. (Canceled)

29. (Canceled)

30. (New) A method for determining a spatial position of a hand-held measuring appliance, wherein a quantity of reference points have been made detectable, the quantity of reference points comprising at least two reference points, and wherein the hand-held measuring appliance is configured to detect and measure the reference points by means of laser radiation, the method comprising the following acts:

deriving positions of the reference points by surveying the reference points from at least one known initial position;

automatically detecting and deriving location information relative to at least one first and one second reference point from the quantity of reference points using the measuring appliance, wherein at least one spatial segment is automatically scanned in a scanning movement by the laser radiation to detect the first and second reference points; and

wherein the location information for at least the detected first and second reference points is derived by measuring at least:

the distance between the measuring appliance and the first reference point; and

the distance between the measuring appliance and the second reference point and/or the angle (γ) between the first and second reference points; and

the angle of inclination (α, β) to the first or to the second reference point; or

at least one distance to a third reference point; and

derivation of an actual position of the measuring appliance from the location information and the positions of at least the first and second reference point.

31. (New) The method of Claim 30, further comprising repeating at least one of the acts of claim 30.

32. (New) A method according to Claim 30, wherein in the automatic detection and derivation of location information:

at least an inclination of the measuring appliance is derived;

an emission direction of the laser radiation is determined indirectly or directly; and/or

an actual orientation of the measuring appliance is derived.

33. (New) A method according to Claim 32, wherein the emission direction is determined by configuring a defined trajectory.

34. (New) A method according to Claim 30, wherein the first and second reference points are detected on the basis of their reflectivity of the laser radiation.

35. (New) A method according to Claim 34, wherein the first and second reference points are detected on the basis of their reflectivity of the laser radiation by using cooperative targets for establishing the reference points.

36. (New) A method according to Claim 30, wherein the automatic detection includes distinguishing the reference points from one another by recognition of individual codes or individual physical properties coordinated with each reference point.

37. (New) A method according to claim 36, wherein the points are distinguished on the basis of spectral selectivity.

38. (New) A method according to Claim 30, wherein the act of automatic detection and derivation of location information includes recording of images.

39. (New) A method according to Claim 38, wherein the first and/or second reference points are detected using image processing methods.

40. (New) A method according to Claim 38, wherein the location information for at least the detected first and second reference points is derived using image processing methods.

41. (New) A method according to Claim 30, wherein the scanning movement is effected in a substantially rosette or zig zag manner.

42. (New) A method according to Claim 30, wherein the act of automatic detection includes automatic target tracking of at least one of the reference points.

43. (New) A method according to Claim 30, wherein the location information and/or the alignment information for at least the detected first and second reference points are simultaneously derived.

44. (New) A method according to Claim 30, further comprising the act of deriving the actual position and/or an actual orientation by means of inertial sensors.

45. (New) A method according to Claim 44, wherein the act of deriving the actual position and/or actual orientation by means of inertial sensors includes interpolation of the actual position and/or of the actual orientation.

46. (New) A method according to Claim 30, wherein at least one of the distances is measured according to one of the following principles:

phase measurement;

pulse transit time measurement;

pulse transit time measurement with threshold value determination; or

pulse transit time measurement with HF sampling.

47. (New) A method according to Claim 30, further comprising the act of correcting deviations of a positioning and/or orientation measuring device based on inertial sensors.

48. (New) A method according to Claim 47, wherein the deviations include drift effects.

49. (New) A method according to Claim 30, further comprising:

marking processing positions;

defining a first actual position as a start position;

defining a second actual position as an end position, wherein processing positions are automatically derived according to a specified scheme between start position and end position.

50. (New) A method according to Claim 49, further comprising verifying a processing position by performing the method of claim 30.

51. (New) A measuring appliance configured to perform the method of Claim 30.

52. (New) A measuring appliance comprising:

a radiation source for producing laser radiation;

a measuring component configured to automatically detect reference points which have been made detectable, the measuring component further configured to derive location information of the reference points, the measuring component comprising a receiver configured to receive the laser radiation, the receiver being configured to measure distance;

a control component configured to change the emission direction of the laser radiation, the control component being configured so that at least one spatial segment can be automatically scanned by laser radiation; and

a position component configured to derive the actual position of the measuring appliance from the location information of the reference points.

53. (New) A measuring appliance according to Claim 52, wherein the measuring component is further configured to derive the positions of the reference points.

54. (New) A measuring appliance according to Claim 52, wherein the measuring component is configured to measure angles.

55. (New) A measuring appliance according to Claim 54, wherein the measured angles are between two reference points, between a reference point and the horizontal, and/or between the measuring appliance and the horizontal.

56. (New) A measuring appliance according to Claim 52 that is sized and configured to be hand-held.

57. (New) A measuring appliance according to Claim 52, wherein the measuring component is configured to determine the emission direction of the laser radiation relative to an axis of the measuring appliance.

58. (New) A measuring appliance according to Claim 52, further comprising inertial sensors.

59. (New) A measuring appliance according to Claim 52, wherein the control component includes a scanner.

60. (New) A measuring appliance according to Claim 59, wherein the scanner includes at least one rotatable prism or mirror.

61. (New) A measuring appliance according to Claim 52, wherein the measuring component includes an image-recording component.

62. (New) A measuring appliance according to Claim 61, wherein the image-recording component includes a CCD or CMOS camera.

63. (New) A measuring appliance according to Claim 61, wherein the image-recording component includes a wide-angled camera.

64. (New) A measuring appliance according to Claim 52, wherein the measuring component includes a scanning detection component.

65. (New) A measuring appliance according to Claim 64, wherein the scanning detection component includes a coaxial optical system.

67. (New) A measuring appliance according to claim 64, wherein the scanning detection component includes an endoscope.

68. (New) A measuring appliance according to Claim 52, further comprising a telemeter.

68. (New) A measuring appliance according to Claim 52 wherein the control component is configured to vary the extent of the spatial segment.

69. (New) A measuring appliance according to Claim 52, wherein the control component is configured to scan at least two spatial segments independently of one another.

70. (New) A measuring appliance according to Claim 69, wherein the control component includes two trackers for target tracking.

71. (New) A measuring appliance according to Claim 52, further comprising a display for confirming that the measuring appliance has assumed a predetermined position.

72. (New) A measuring appliance according to Claim 71, further comprising a computing component configured to derive predetermined positions.

73. (New) A measuring appliance according to Claim 72, wherein the computer component derives the predetermined positions by establishing a start position and an end position between which processing positions are automatically derived by the computing component according to a specified scheme.

74. (New) A local position-determining system comprising a measuring appliance according to Claim 52, the local position-determining system further comprising at least two reflectors for establishing reference points which have been made detectable.

75. (New) A local position-determining system according to Claim 74, wherein at least one of the reflectors includes one of the following elements:

a glass sphere, in particular as full spheres or hemispheres,

a retroreflective foil, or

a triple prism.

76. (New) A local position-determining system according to Claim 75 wherein at least one of the reflectors is an element provided with a coding or a spectral selectability.